

Linksys SPA400



# Trixbox Integration Guide

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Access Point – Connecting You & Your Customers.

Contact : [support@voipshop.com.au](mailto:support@voipshop.com.au)

## Overview:

The Linksys SPA400 is a 4 Line FXO gateway capable of connecting 4 PSTN lines to your asterisk system to make and receive calls. This guide is a step by step on how to configure Trixbox to utilize the features of the SPA400. Limitations:

- \* The voicemail function of the SPA400 cannot be used.
- \* You cannot select which line of the SPA400 to use. They are treated as a single group of 1-4 lines. The SPA400 will know which lines are available by the line voltage when plugged in.

## Configure the SPA400:

### Step 1 – Obtain the IP address if the SPA400

Option 1(Easiest): You will need to check your DHCP server to see what IP address has been allocated to the SPA400 (Will usually be in the Status area of your Modem/Router).

Option 2(Harder): If you only have a few devices on your network you can use angry IP scanner (<http://www.angryziber.com>) which will search your network for devices. You should be able to work out the SPA400 address. Try searching for port 5060 also to help identify.

Option 3: You can download the SPA9000 setup utility from <http://www.linksys.com> it will scan the network for SPA400s and show the IP address.

Note the IP Address: \_\_\_\_\_

### Step 2 – Access the SPA400

In your favourite web browser type the IP address of the SPA400, it should ask for a username and password.

The **default username** is Admin (Note capital A)

The **default password** is *blank*



The screenshot shows the Linksys SPA400 web interface. The top header is blue with the Linksys logo and "A Division of Cisco Systems, Inc." on the left, and "Firmware Version: 1.0.0.7" on the right. Below the header is a navigation bar with "Setup" and "Administration" tabs. The "Setup" tab is active, and the "Network Setup" sub-tab is selected. The "Network Setup" page has a left sidebar with "Network Setup" and "Basic Setup" options. The main content area shows the "Dynamic IP Address: (DHCP Client)" option selected with a radio button, and the "Fixed IP Address" option with a radio button and a text input field containing "192.168.1.56".

### Step 3 – Set the SPA400 to a Fixed IP address

Asterisk needs to access your SPA400, so it needs to be set to a fixed ip address. To do this: -

Under Setup -> Basic Setup

- Select Fixed IP address and enter a valid fixed IP address for your network.
- Be sure to enter a DNS server, if you do not know enter the Telstra DNS server 139.130.4.5 – You can leave the secondary blank
- Set your time zone.
- Click Save Settings
- Restart System

**Setup**

**Setup** | **Administration** | **Status** | **Event Logs**

Basic Setup | SPA9000 Interface | Voice | Voicemail Server | Voicemail Us

**Network Setup**

☐ Dynamic IP Address:  
(DHCP Client)

☒ Fixed IP Address: 192 . 168 . 1 . 56

IP Subnet Mask: 255 . 255 . 255 . 0

Gateway IP Address: 192 . 168 . 1 . 1

**Domain Name Server (DNS) Address**

Primary DNS: 139 . 130 . 4 . 5

Secondary DNS: . . . .

**NTP**

NTP Server 1: time.nist.gov

Time Zone: (GMT+10:00) Australia

**Save Settings** **Cancel Changes**

Sample Config – Use Address Valid For Your Network  
Check with the network administrator if unsure.

Note the IP address in the Notes Section.

## Step 4 – Setup the SPA400 Voice Configuration.

Open the SPA400 in your web browser using the new IP address.

Select Setup->SPA9000 Interface.

- Enter SPA400 in the User ID:
- Leave SPA9000 on discover automatically
- No other changes should need to be made
- Click Save Settings (You Do Not Need To Restart)

The screenshot shows the 'SPA9000 User ID' configuration page. The sidebar on the left lists various configuration categories. The main area contains the following settings:

- User ID:** SPA400
- Discover Automatically:** ☒ (Selected)
- Static Address:** ☐ (Unselected)
- IP Address:** 192.168.0.70
- Port:** 5060
- Port ID 1:** FXO\_Port\_ID\_1
- Port ID 2:** FXO\_Port\_ID\_2
- Port ID 3:** FXO\_Port\_ID\_3
- Port ID 4:** FXO\_Port\_ID\_4
- Signaling Port:** 5060
- RTP Port:** 10000
- Call Signaling Packets:** 7 (2 Hex digit byte value)
- RTP Packets:** b0 (2 Hex digit byte value)
- Session:**
  - ☒ Enable Session Timer
  - Desired Refresh Time:** 0 (sec)
  - Minimum Refresh Time:** 0 (sec)

At the bottom right, there are two buttons: **Save Settings** and **Cancel Changes**.

Screenshot of Setup -> SPA9000 Interface

Select Setup -> Voice

For Australia you need to change: -

- Impedance : 220 Ohms + (820 Ohms || 120nF)
- On-Hook speed : 26ms

Setup		Administration	Status	Event Logs	
Basic Setup		SPA9000 Interface	Voice	Voicemail Server	Voicemail Us

  

Voice Coders	
Preferred Coder	<input checked="" type="radio"/> G.711U <input type="radio"/> G.711A <input type="radio"/> G.729
Voice Coders	
	Packetization    VAD
G.711U	20ms    OFF
G.711A	20ms    OFF
G.729	30ms    OFF

  

Voice Setting	
Calling Timers	
Wait-for-Answer time :	180 sec
Call Limit :	65535 sec
Dialing Parameters	
Tone out on:	200 msec
Tone out off:	200 msec
DTMF power:	-130 (-400 ~ 30) * 0.1 dB
Answer after :	1 rings
Dial out wait :	400 msec
Dial out battery threshold :	20 volts
Line Settings	
Transmit Gain:	0 dB
Receive Gain:	0 dB
Impedance:	220 Ohms + (820 Ohms    120 nF)
Tip/Ring voltage:	3.5 (default)
Operational loop current Min:	10mA (default)
On-Hook speed:	26ms (Australia)
Ring frequency Min:	10
Ring frequency Max:	100
Ring Validation Time:	256 (default)
Ring Indication Delay:	512 (default) ms
Ring Timeout (ms):	640 (default)
Ring Threshold (vrms):	13.5 - 16.5 (default)
Ringer Impedance:	High (default)
DC current Limiting:	Enable (default)
Caller Id Method	UK
<input type="radio"/> Battery reversal as disconnect signal	
<input checked="" type="radio"/> Loop period shut-down as disconnect signal	

## Step 5 – Configure Trixbox Trunk.

Open your FreePBX interface: <http://trixbox.ip/admin/>

Select Trunks -> Add SIP trunk

*Complete the form with the details below:*

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Outbound Caller ID: Blank

Never Override CallerID : Unticked

Maximum Channels: (the number of pstn lines plugged into the SPA400)

Dial Rules: Leave Empty

Outbound Dial Prefix: Empty

Trunk Name: SPA400 (Can be anything you wish)

Peer Details:

allow=ulaw  
canreinvite=no  
context=from-trunk  
dtmfmode=rfc2833  
host=**x.x.x.x**  
insecure=very  
type=friend  
user=SPA400

USER Context: Leave Blank

USER Details: Blank (Delete the default information)

Register String:

SPA400@**x.x.x.x**/SPA400

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Note : **x.x.x.x** should be where you enter the IP address of the SPA400

Click Submit Changes.

## Step 6 – Configure Outbound Route.

You can now treat the SPA400 like any other trunk. To add an outbound router (eg, dial 9 to dial out the SPA400)

Outbound Routes -> Add Route

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Route Name: SPA400PSTN (*this can be anything*)

Route Password: Blank

Emergency Dialing: Unticked

Intra Company Route: Unticked

Dial Patterns: 9|.

Trunk Sequence: SPA400

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Click Submit Changes

## Step 7 – Configure Inbound Route.

This will setup an inbound route for people who call the PSTN lines plugged into the SPA400.

Setup -> Inbound Routes -> Add Incoming Route

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DID Number: SPA400 (*case sensitive*)

Caller ID Number: Blank

Zaptel Channel: Blank

Fax Handling

Leave as is

Select the Destination

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Click Submit

Click the Red "Apply Configuration Changes" to reload asterisk

**Complete:**

You should now be able to make and receive calls via your SPA400.

Email [support@voipshop.com.au](mailto:support@voipshop.com.au) for further support if required.

## Congratulations

**Notes:**

SPA400 IP Address: \_\_\_\_\_

SPA400 Username: \_\_\_\_\_

SPA400 Password: \_\_\_\_\_

Number of Lines: \_\_\_\_\_

Installed By: \_\_\_\_\_

Date: \_\_\_\_\_